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(54) Title: TYPE III SECRETION PATHWAY IN AEROMONAS SALMONICIDA, AND USES THEREFOR

(57) Abstract: Disclosed is a newly identified and characterized type III secretion system in *Aeromonas salmonicida*. The invention also encompasses the use of components of the novel secretion system in immunoprotection against *A. salmonicida* infection, as well as other diagnostic and therapeutic uses thereof.

INTERNATIONAL SEARCH REPORT

Internatio

Application No

PCT/CA 01/01589

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07K14/195 A61K39/02 G01N33/569 C12Q1/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07K A61K G01N C12Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EMBL, EPO-Internal, WPI Data, BIOSIS, MEDLINE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KARLYSHEV A V ET AL: "Cloning and study of the genetic organization of the exe gene cluster of Aeromonas salmonicida" GENE, ELSEVIER BIOMEDICAL PRESS. AMSTERDAM, NL, vol. 158, no. 1, 1995, pages 77-82, XP004206656 ISSN: 0378-1119 the whole document ----- -/--	1-10

☒ Further documents are listed in the continuation of box C.☐ Patent family members are listed in annex.

* Special categories of cited documents:

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

& document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

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Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	NOONAN B ET AL: "An <i>Aeromonas salmonicida</i> gene required for the establishment of infection in rainbow trout (<i>Oncorhynchus mykiss</i>)" GENE: AN INTERNATIONAL JOURNAL ON GENES AND GENOMES, ELSEVIER SCIENCE PUBLISHERS, BARKING, GB, vol. 175, no. 1, 10 October 1996 (1996-10-10), pages 127-131, XP004043304 ISSN: 0378-1119 the whole document	1-10
A	YAHR T L ET AL: "IDENTIFICATION OF TYPE III SECRETED PRODUCTS OF THE <i>PSEUDOMONAS AERUGINOSA</i> EXOENZYME S REGULON" JOURNAL OF BACTERIOLOGY, WASHINGTON, DC, US, vol. 179, no. 22, November 1997 (1997-11), pages 7165-7168, XP000915058 ISSN: 0021-9193 the whole document	1-22
X	-& DATABASE EMBL 'Online! 3 October 1997 (1997-10-03) YAHR T.L. ET AL.: "Pseudomonas aeruginosa PopN (popN), Pcr1 (pcr1), Pcr2 (pcr2), Pcr3 (pcr3), Pcr4 (pcr4), PcrD (pcrD) and PcrR (pcrR) genes, complete cds." Database accession no. AF010150 XP002216597 the whole document	15

INTERNATIONAL SEARCH REPORT

Intern al application No.
PCT/CA 01/01589

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
Although claims 1-6, 12 and 19 are directed to a method of treatment of the animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.